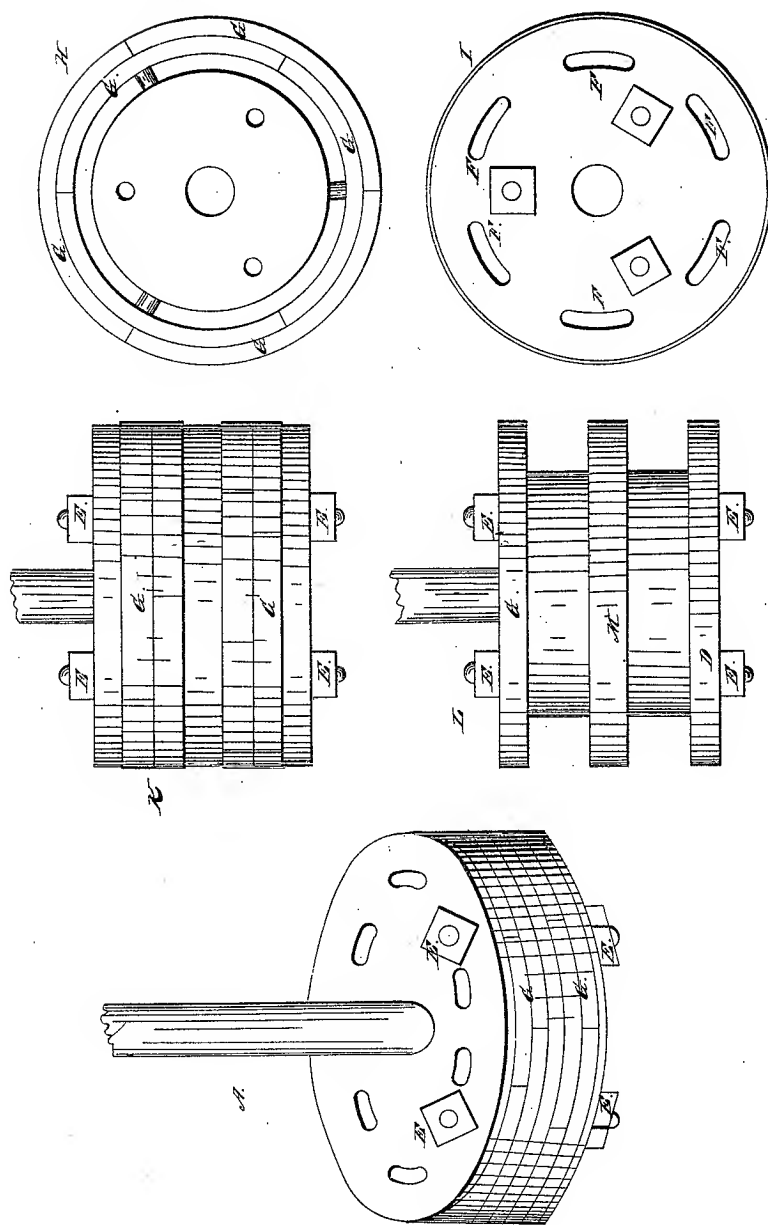


J. Swainson,
Steam-Engine Piston.

N^o 159.

Patented Mar. 31, 1837.



UNITED STATES PATENT OFFICE.

JOHN SWAINSON, OF NEW YORK, N. Y.

METALLIC PISTON FOR STEAM-ENGINES, PUMPS, &c.

Specification of Letters Patent No. 159, dated March 30, 1837.

To all whom it may concern:

Be it known that I, JOHN SWAINSON, of the city, county, and State of New York, have invented a new and useful improvement, never before known, in the construction of metallic pistons for steam-engines, cylinders, air-pumps of condensing-engines, and for the lifting and forcing pumps of condensing steam-engines.

10 The nature of my invention consists in causing the steam, or other fluid, to act with equal pressure on the whole inner surface of the packing of the piston and to press out the packing with a force equal to the pressure of the steam or other fluid.

15 To enable engineers, or others skilled in the art, to make and use my invention I will proceed to describe its construction and operation.

20 A view of the piston is seen in the annexed drawing at A. It is constructed with one plate, cast solid in the middle of the head, dividing the packing into two breadths or apartments. The top and bottom plates (C and D) are fitted with screens or bolts (E) to hold the plates in their proper places. The top and bottom plates have openings cut in them (see F F, &c.) to admit the steam or other fluid behind the packing, so that one breadth of the packing shall be pressed at each return of the stroke.

The packing consists of metallic rings, cut in segments, (shown at G G, &c.) made in two thicknesses—an outer, and an inner one. The inner ring, (cut into segments) is in one breadth, and the outer thickness consists of two rings, (each cut in segments) and arranged so as to break joints. The packing so used can be made of any metal, but I recommend brass. A plan of the middle plate of the piston head is shown at H; a section of the same at M; a plan of the two outer ones is shown at I; a vertical section of the piston, with the packing, is shown at K; the same without the packing at L.

What I claim as my improvement, and desire to secure by Letters Patent, is—

Firstly, the middle plate in the piston head above described, and secondly, the combination therewith of the two outer plates, which contain openings, through which the steam, or other fluid, can pass in behind the whole inner surface of the packing, and press it out against the cylinder, with a force equal to the pressure of the steam, or other fluid.

JOHN SWAINSON.

Signed in presence of—
OWEN G. WARREN,
L. T. WARREN.